Report to the Alaska Board of Fisheries
KUSKOKWIM AREA SALMON, 1986

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stimates for in-season management are difficult to obtain. Several research projects are presently on-line to assist with assessing in-season run strength. They include a Bethel based drift test fishing project which completed its third full season and appears to have been successful in assessing in-season run strength. Analysis of migratory timing information collected from commercial catches, sonar counting stations and weir locations has helped managers to better understand and describe the run entry pattern and permit the managers to predict likely abundance for the remaining portion of the run.

Except in areas where intensive commercial fisheries occur, the subsistence fishery is subject to very few restrictions in order to give preference to subsistence users. In all commercial fishing areas the majority of the fishermen usually take salmon for BOTH commercial and subsistence uses. Subsistence fishing restrictions, in the form of short closures immediately before, during and following the commercial periods, are used in Districts 1, 4 and 5 to discourage illegal commercial fishing under the guise of subsistence fishing. In Districts 4 and 5, the spawning tributaries, are included in these closures. In District 1 subsistence fishing is only restricted in the commercial fishing district within the main stem of the Kuskokwim River. Subsistence fishing is open 7 days per week in tributaries of the Kuskokwim. Substantially more subsistence fishing time is allowed compared to commercial fishing in all areas. For example, during the 1986 fishing season (June - August) in District 1 subsistence fishing was allowed for approximately 74 days out of the 90 days when harvestable numbers of salmon were present, while commercial fishing was allowed for only 75 hours.

Chinook or "king" salmon (Oncorhynchus tshawytscha):

To provide for a subsistence harvest that has averaged an estimated 53,000 (Table 1) chinook salmon during the past five

years and to maintain average spawning escapements, management of commercial chinook fisheries in the Kuskokwim River has become more restrictive than during the period 1972 through 1984 in which an overharvest of chinook salmon resulted in six of these 13 years. The Board of Fisheries adopted major changes in the commercial fishing regulations to reduce the harvest. Regulations adopted in 1984 established 17,000-34,000 chinook salmon harvest guideline for the Kuskokwim River and restricted commercial gill nets to 6-inch or smaller mesh size for the entire season to reduce the harvest of the larger female chinook salmon.

Timing of the chinook salmon migration varies in response to environmental conditions. The opening of the commercial fishing season in District 1 and 2 occurs when chinook salmon are distributed throughout the river below Aniak and Department test fishing and subsistence catches indicate that a sustained run is in progress. The Department attempts to give three or four days advance public notice prior to the season opening. The District 1 season opened during the middle of June (10 June to 18 June) during the previous five years. This strategy is designed to allow:

1) uninterrupted subsistence fishing during the early portion of the run.

2) the harvest to be spread over a greater portion of the peak of the run, reducing the risk of overharvest of discrete stocks.

3) determination of early run strength through analysis of test fishing and subsistence catches.

Commercial fishing in Kuskokwim River districts is opened and closed by emergency order. Fishing periods are usually six hours in duration (1800 to 2400) and are announced twice each per week, usually Monday and Thursday. The 1800 to 2400 hours schedule is preferred by local fishermen at this time of year. This schedule allows subsistence fishermen to anticipate commercial openings and the associated subsistence closures 24 hours before, during and six hours afterwards which helps avoid the communication problems involved in contacting the subsistence fishing community. Maximum gill net specifications are for 6-inch or smaller mesh, 50 fathoms in length and 45 meshes depth.

The Board of Fisheries has established a commercial harvest guidelines range of 15,000-30,000 chinook salmon in District 1 and 2,000 to 4,000 chinook salmon in District 2. The fishery may be terminated before or after the harvest guidelines are attained depending on indicated in-season run strength.

The commercial chinook salmon season in the two coastal districts, District 4, Quinhagak and District 5, Goodnews Bay, is normally opened between 11 and 20 June depending on the entry pattern of chinook salmon into the Kanektok and Goodnews Rivers. Commercial fishing in these two districts is allowed only in marine waters. Commercial fishing is normally scheduled for two 12-hour periods per week from mid-June to early July when the target species is chinook salmon. Gill net specifications are identical to those in the Kuskokwim River districts. The commercial chinook salmon guideline harvest levels in District 4 and 5 are 15,000 and 5,000 fish respectively for runs judged to be of average magnitue by comparing data collected by the Department's sonar, test fishing and tower projects with data collected in previous years, Harvest levels can be increased (or decreased) in response to the Department's assessment of in-season run strength by adjusting fishing time via emergency order.

Chum salmon (Oncorhynchus keta):

The Board of Fisheries has not established harvest guidelines for chum salmon in Districts 1,4, or 5. The commercial chum salmon harvest for the Kuskokwim River (Districts 1 and 2) normally ranges from 200,000 to 400,000 salmon. Catches within this range normally provide for traditional subsistence requirements and adequate spawning escapements. Under the current management plan, District 2 has a Board of Fisheries guideline harvest range of 4,000 to 8,000 chum salmon.

Although District 1 has no harvest guideline, it is managed for a harvest within a range of 200,000-400,000 based on in-season run strength evaluation provided by Department test fishing, escapement information and commercial-subsistence catch data. Normally a 2 to 3 week closure beginning in early to mid-July is enacted after the peak of the chum salmon run has passed through the lower river and before coho begin migration.

The commercial harvest will not greatly exceed 300,000 fish except under the following conditions:

1) Test fishing catches indicate adequate escapement of chum salmon is occurring.

2) Commercial catch per unit effort (especially in early and middle July) is above average.

3) Subsistence fishermen report that adequate subsistence catches are being made.

4) Chum salmon escapement projects indicate adequate escapements are occurring.

Management options for insuring adequate escapements during poor returns include in order of priority:

1) Commercial harvest fishing time restrictions, including early closure.

2) Subsistence harvest fishing time restrictions.

In early July sockeye and chum salmon are the target species in District 4, Quinhagak. Commercial fishing is opened and closed by emergency order. Three-12-hour periods per week from early July to late July have normally been allowed unless the return of these species is weak. Fishing times may vary depending on run strength indicators such as escapement monitoring, test fishing and comparative commercial harvest statistics.

Sockeye or "red" Salmon (Oncorhynchus nerka):

Sockeye salmon are less abundant than chinook, chum and coho salmon in Districts 1 and 2. Historically, fishermen have not accurately identified sockeye and chum salmon in their commercial or subsistence catches in the Kuskokwim River. For this reason, the true accounting of the sockeye and chum salmon harvest in the main Kuskokwim River has not been accurately documented. In recent years, fishermen, processors and the Department have worked together to accurately identify each species in the commercial harvest. The 1981 season was the first year that a significant sockeye salmon harvest was documented. Sockeye salmon have comprised 10 to 24 percent of the combined chum-sockeye salmon catch since 1981. Prior to 1981, the reported sockeye salmon catch was less than 2 percent of the combined chum-sockeye salmon catch. The limited sockeye salmon database and interviews with lifelong residents of the drainage indicate that the recent increased catch is also partly a result of an improvement in the size of the sockeye salmon returns. In early July sockeye and chum salmon are the target species in District 4, Quinhagak. In June and July sockeye salmon is the target species in District 5, Goodnews Bay.

Coho salmon (Oncorhynchus kisutch):

The Kuskokwim River reopens usually by 1 August when coho salmon predominate in test fishing and subsistence catches. A daylight fishing schedule of two 6-hour fishing periods per week (0900 to 1500 hours on Monday and Thursday) is normally announced by emergency order unless run strength indicates the need for an adjustment in time.

The commercial coho salmon harvest in the Kuskokwim River has averaged 363,000 salmon over the 1981-1985 5-year period. In recent years utilization of the species has increased due to larger runs and more effort. A harvest guideline of 2,000 to 4,000 coho salmon is established by regulation for District 2. During the last 5-year period coho salmon have been the numerically dominant species in the Kuskokwim River commercial harvest.

Annual commercial coho salmon harvests in District 4 have averaged 64,000 fish during the 1981-85 5-year period. Intermittent aerial escapement surveys along with commercial catch data are the only in-season indicators of run strength. Normally, three (Monday, Wednesday, Friday) 12-hour (0600 to 1800 hours) fishing periods are allowed per week. This schedule has, in the past allowed commercial catches that still provide adequate spawning escapements and subsistence harvests. Inclement weather frequently disrupts the fishing effort in District 4 during the coho salmon return. The three period per week schedule is normally frequent enough to compensate for any "lost" (due to weather) fishing time. District 4 closes by regulation on September 8.

The annual commercial harvest of coho salmon in District 5 has averaged 35,000 fish during the 1981-85 five-year period. Aerial survey and commercial catch data are the only in-season indicators of run strength. The management strategy in District

4 (three 12-hour periods per week) is similar to that used in District 5 which also closes by regulation on September 8.

STATUS OF FISHERY AND STOCKS

During the last 20 years, Kuskokwim Area fisheries have expanded as a result of increasing effort by participants, improvements in fishing gear, improvements in boats and motors as well as increased tendering and processing capabilities. The number of gear operators in the area has increased from 210 in 1966 to a high of 789 in 1986.

Commercial salmon fishermen were paid an average of 0.7 million dollars from 1971 through 1975. During the period 1981-1985 the average annual catch value to the salmon fishermen was 3.9 million dollars (Table 2).

Commercial and subsistence catches in the Kuskokwim Area since 1913 are summarized in Table 3.

Kuskokwim River Chinook Salmon

The estimated combined commercial and subsistence chinook salmon harvest has increased from an average of 56,000 fish for the 10 year period 1960-1969, to 81,000 during 1970-1979 and 93,000 during 1981-1985 (Table 1).

A commercial harvest target of 30,000 to 40,000 was in effect from 1973-1984 to stabilize catches until the impact of such a harvest levels could be evaluated. Annual stock assessments indicated that the 30,000 to 40,000 harvest range was too high during weaker return years. In 1984, the Board of Fisheries reduced the range to a 15,000-30,000 chinook salmon harvest guideline in District 1 in response to consecutive poor returns in 1983 and 1984. The harvest guideline was exceeded in 1985

with a chinook salmon catch of 36,159. As a result, chinook salmon escapements in 1985 were 25 to 43 percent of the desired objectives established for key index streams throughout the drainage. The six-inch mesh restriction appeared to result in an improvement in quality of the escapement with an increase in the proportion of females at Kogrukluk weir from 22 percent females in 1984 to 31 percent in 1985; although the 31 percent female sex ratio is well within the recorded range of sex ratios at that location (22 to 49% female).

The combined subsistence and commercial catch of 63,400 in 1986 was the lowest since 1974. Despite the harvest reduction, escapements were 28 to 32 percent below objective levels and the sex ratio at the weir was low (23% female).

The brood years for the 1985 and 1986 returns were expected to produce increasingly stronger returns on the basis of escapements recorded om 1979-1981. A decline in the return size continuing through 1986 indicates that the Kuskokwim River chinook salmon stock is in a serious decline.

Kuskokwim River Chum Salmon

Prior to 1971 the very small numbers of commercial chum salmon harvested represented fish taken incidentally during the chinook and coho salmon fisheries. Expansion of the commercial chum salmon fishery was allowed in 1971 when it was apparent that a moderate increase in chum salmon utilization would be biologically sound. Based upon past subsistence harvest estimates (1924-1943 levels), a 400,000 combined commercial and subsistence harvest appeared to be consistent with the reproductive potential of the run. The 400,000 combined catch figure was a stated management goal during the early 1970's.

Estimated subsistence catches for the entire river have ranged from 116,000 to 277,000 chum salmon since the inception of the

ɔmmercial fishery in 1971. The recent five year average annual ɹarvest (1981-1985) is 155,103. The 1986 harvest was 157,000. Combined harvest levels since 1971 have ranged from 185,035 (1971) to 647,000 (1980) and the recent 5 year average (1981-1985) is 498,521. The combined harvest in 1986 was 466,213. Escapement objectives were approached or achieved from 1981-1984. In 1985 and 1986 escapement objectives were not achieved for this species.

Prior to 1979, commercial fishing was only allowed in the lower 49 miles of District 1. In 1979, the Board of Fisheries expanded the area open to the lower 78 miles of District 1 (downstream of Bethel). The Board opened the entire 126 mile length of District 1 for the first time in 1985. The longer district has increased the efficiency of the fleet, and presumably, the exploitation rate since the salmon are exposed at least twice to the commercial fishery before departing the district. This appears to be a contributing factor to the failure to achieve escapement ɔjectives for chums in 1985 and 1986.

Commercial fishing effort in District 1 has ranged from 216 fishermen in 1971 to 631 fishermen in 1986 (Table 4).

Kuskokwim River Coho Salmon

Since statehood the commercial catches for the entire river have ranged from 2,498 in 1960 to 660,000 in 1986 (Table 5). The recent five year annual average (1981-1985) is 363,000 fish. Effort in number of fishing permits has ranged from 83 in 1971 to 663 in 1986 (Table 4).

Traditionally, relatively few coho salmon were taken in the subsistence fishery due to poor drying conditions and the fact that subsistence needs were normally met by earlier migrating species. This pattern has been changing gradually since ɹcreasing numbers of families own freezers. Coho salmon is the

preferred species for freezing, accounting in part for the increased documented subsistence use of coho salmon during the last five years.

With the exception of 1983, coho salmon catches and escapement have been average to above in magnitude during the past nine years.

District 4, Quinhagak, Salmon -- All Species:

The Quinhagak District commercial fishery is south of the Kuskokwim River and within the Kuskokwim management area (Figure 1). Commercial fishing is allowed only in Kuskokwim Bay marine waters (Figure 4); however, subsistence fishing is allowed within the Kanektok River. The majority of gear operated in the fishery consists of drift gillnets fished at low tide in tidal channels located two to five miles offshore and near to shore at high tide.

It appears that chinook salmon abundance has been decreasing since the peak commercial harvest of 46,385 chinook salmon in 1983. However escapement objectives have been achieved by reducing commercial fishing time. Additionally, sockeye and chum salmon escapements were below objectives in 1985 and 1986. Declining escapement resulted in elimination of fishing periods to reduce commercial harvest of these species and thereby increase escapements.

Status of coho salmon is difficult to determine as aerial surveys are the only form of escapement monitoring currently available in the district. Aerial surveys are often impossible due to weather conditions in late August and September. The 1986 commercial coho catch was average; however, due to poor weather conditions and high water escapement, surveys were not obtained.

District 5, Goodnews Bay, Salmon -- All Species:

Commercial salmon fishing began in 1968 in Goodnews Bay and has occurred annually since that time. The prevailing commercial gear employed consists of drift gillnets that are fished in tidal channels radiating from the Goodnews River. Fishermen are required by regulation to use six inch or less stretched mesh nets. This assists managers in reducing the selective harvesting of the larger and more productive chinook salmon while allowing the take of the more abundant sockeye salmon.

Subsistence salmon harvest surveys have been conducted by the Department in Goodnews Bay annually since 1977. The 1986 subsistence harvest is within the normal range experienced for Goodnews Bay during the past ten years.

Salmon escapements on the middle fork of the Goodnews River have been estimated using a counting tower annually since 1981. Chinook, sockeye and chum salmon are in migration during the time the tower is in operation. Coho and pink salmon are also counted, but the project termination date precludes adequate assessment of the escapement of these species. The primary objective of the project is to provide daily escapement information to assist management of the commercial salmon fishery in Goodnews Bay and to allow the accurate interpolation of the aerial survey escapement data collected in the Goodnews River drainage.

SEASON SUMMARY

The total 1986 Kuskokwim Area season commercial salmon catches (District 1, 2, 4 and 5) consisted of 44,972 chinook, 142,029 sockeye, 736,910 coho, 15,923 pink and 349,268 chum salmon (Table 3). A record 789 permit holders participated in the Kuskokwim rea fishery this year. The total amount paid to fishermen was

$4,746,000. The average Kuskokwim permit holder earned $6,000 in 1986. This is a 22% increase in earnings over the previous 5 year average and the second highest total catch value on record.

Kuskokwim River:

Subsistence and test fishing catches consistently indicated a weak return of chinook salmon to the Kuskokwim River throughout the 1986 season. The commercial fishery was delayed until 26 June at which time chinook salmon comprised less than 5 percent of the test fishing catch and the sockeye and chum salmon returns appeared strong. District 2 was opened coincidental with District 1, to spread the harvest over a larger portion of the return and to improve the quality of the salmon taken in District 2. This was the latest opening in the history of the fishery.

Sockeye and chum salmon catches were strong and the test fishery indicated adequate escapements were occurring. Fishing continued on the two period a week schedule through 10 July and then closed. Early escapement results indicated both poor chinook and chum salmon escapements. The fishery reopened on 31 July when the Department test fishery and subsistence catch reports indicated that the majority of fish available were coho salmon. District 2 was reopened on 7 August, when the majority of the fish available were coho salmon (Table 6).

A partial fisherman's strike and bad weather resulted in a low effort during the opening in District 1 on 31 July. Test fishing results and a record 6 hour period catch on 4 August resulted in an increase of fishing time to 9 hours on 7 August. A record 9 hour period catch on 7 August exceeded tendering capacity in the district. This created some quality problems and in an attempt to alleviate this problem an every other day 6 hour period was instituted on 11 August. At the close of the third period in the every other day schedule on 13 August, the test fishery indicated that the frequent fishing schedule and length of the districts

was not allowing adequate escapement. The fishing schedule was returned to two 6 hour periods beginning on 18 August and remained on that schedule until the closure by regulation on 1 September (Table 6).

The commercial chinook salmon catch in District 1 of 18,510 was within the harvest guideline of 15,000-30,000. The commercial catch in District 2 of 904 did not approach the guideline of 2,000-4,000 (Table 7). The combined commercial catch of 19,414 was the lowest on record since 1974. In spite of the low catch chinook salmon escapements were only 28 to 32 percent of objective levels.

The sockeye salmon harvest in both districts of 95,433 was the second highest on record (Table 5). Escapements for this species were also excellent.

The chum salmon catch of 309,213 was similar to the previous five year average of 317,575 (Table 5). Escapements were 50 to 75 percent of objective levels.

The coho salmon harvest of 659,988 was the largest catch on record (Table 5). Aerial surveys were hindered by weather but test fishing and weir results indicate escapements were excellent.

District 4, Quinhagak:

The Quinhagak district was opened before any other district in the area for the first time in the history of the fishery. The first two openings on 12 and 16 June had no effort due to a strike by fishermen. Openings continued on a two 12 hour period per week schedule until 21 July when poor escapements of sockeye and chum salmon led to a closure. The fishery was reopened on 4 August when subsistence catches indicated that coho salmon were

the dominant species. The fishery continued on a three 12 hour period per week schedule until the regulatory closure on 8 September. The last two periods had no effort due to a lack of buyers in the district (Table 8).

The commercial catch in District 4 totaled 22,835 chinook salmon, 21,484 sockeye, 57,544 coho, 8,700 pink and 29,700 chum salmon (Table 8). The chinook salmon catch was below the previous five year average catch, continuing the decline from the record catch in 1983 (Table 9). The escapement objective was nearly achieved since 70 percent of the desired number of chinook salmon were seen in surveys conducted in only fair conditions. The sockeye salmon harvest was 21,484, above the five year average of 15,675 (Table 9). The chum catch of 29,700 was below the five year average of 36,117 (Table 9). Despite reduced fishing time and a mid-season closure of the fishery the escapement objectives for these two species were not achieved for the second consecutive year. The coho salmon catch of 57,544 was below the previous five year average but was still the third highest in the history of the fishery (Table 9). Weather conditions prevented any assessment of the coho salmon escapement.

Fishing effort increased over prior years. A record 324 fishermen made at least one delivery in this district in 1986 (Table 10), well above the 5 year average of 218. Effort peaked on 23 June with a record 216 boats fishing District 4 during a 12 hour period (Table 8). This increase was probably due to a shift in effort caused by the closure of the Kuskokwim River districts.

District 5, Goodnews Bay:

The commercial fishery in District 5 opened on 19 June when it was confirmed that chinook salmon were entering the Goodnews River. Following three 12 hour fishing periods the commercial catch and escapements past the tower were indicating a weak chinook salmon return and the fishery was closed on 27 June. The

fishery was reopened on 7 July when a strong escapement of sockeye salmon combined with the normal end of the chinook salmon migration indicated a surplus of salmon would be available. On 16 July, the fishery was placed on a three 12 hour period per week schedule when the incidental chinook salmon catch had declined to insignificant levels and sockeye salmon escapement objectives were being achieved. The fishery closed by regulation on 8 September following two fishing periods that had no effort due to the absence of any buyers in the district (Table 11).

The Goodnews Bay commercial catch in 1986 totaled 2,723 chinook, 25,112 sockeye, 19,378 coho, 4,447 pink and 10,355 chum salmon (Table 11). Pink salmon are not a target species. The low commercial take may not truly reflect the pink salmon abundance.

The 1986 harvest of sockeye and pink salmon was above the previous five year (1981-1985) average (Table 12). Chinook, coho and chum salmon were below the previous five year average (Table 12). Effort in this district also reached a new record level of 86 fishermen compared to the previous 5 year average of 64 (Table 13).

The estimated 1986 salmon passage at the tower during operation totaled 2,083 chinook, 51,069 sockeye, 163 coho, 8,133 pink and 14,765 chum salmon. Only the chinook salmon passage was below escapement objectives. Budget considerations resulted in an earlier project termination date than scheduled.

OUTLOOK FOR 1987

The majority of the returning chinook salmon in 1987 will be five and six years of age. The Kuskokwim Area is still developing a data base for future return forecast and only broad range harvest projections are possible by examining the brood year's escapement. The brood year escapement for the majority of the 1986 chinook salmon return was above objective levels in 1981

and slightly below in 1982 in the Kuskokwim River stocks. The ower than expected returns experienced since 1982 however, suggest that a below average return can be expected in 1987. Chinook salmon escapements in the Kanektok River were at objective levels in the brood years for 1987 and an average return is expected. In the Goodnews River the 1981 brood year was at objective levels while 1982 was below desired levels. A below average to average return of chinook salmon is expected in 1987 in the Goodnews Bay District.

Goodnews Bay (District 5) is the only fishery within the Kuskokwim area which targets on sockeye salmon. The majority of sockeye salmon return at five years of age with a few maturing at four years. Escapement assessment was initiated at the Goodnews River counting tower site for the first time in 1981. The escapement past the counting tower in 1982 was good but poor in 1983. The return in 1987 is expected to be below average to average.

Chum salmon return as four and five year old fish. The 1987 return would be from the 1982 and 1983 brood year escapements. The escapements in those two years were below or at objective levels in all systems. Therefore, the chum salmon return is expected to be below average to average.

Little information is available to assess coho salmon abundance in 1987. Escapement assessment was initiated at the Kogrukluk River Weir site for the first time in 1981. The majority of coho salmon mature at four years of age. The 1983 coho salmon escapement past the weir was below average. The 1987 return for the Kuskokwim River from this brood year is expected to be below average to average.

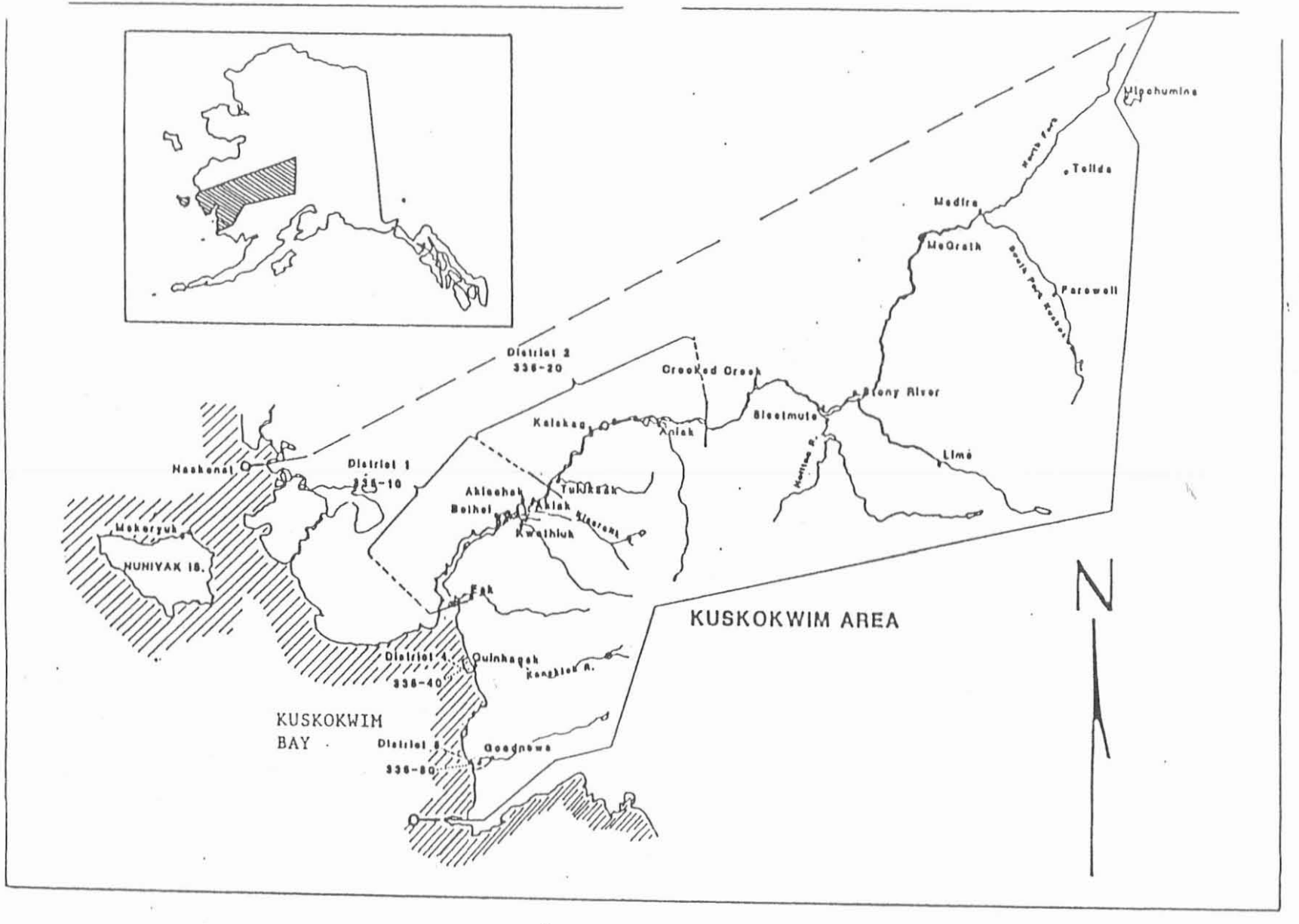

Figure 1. Kuskokwim Area Map.

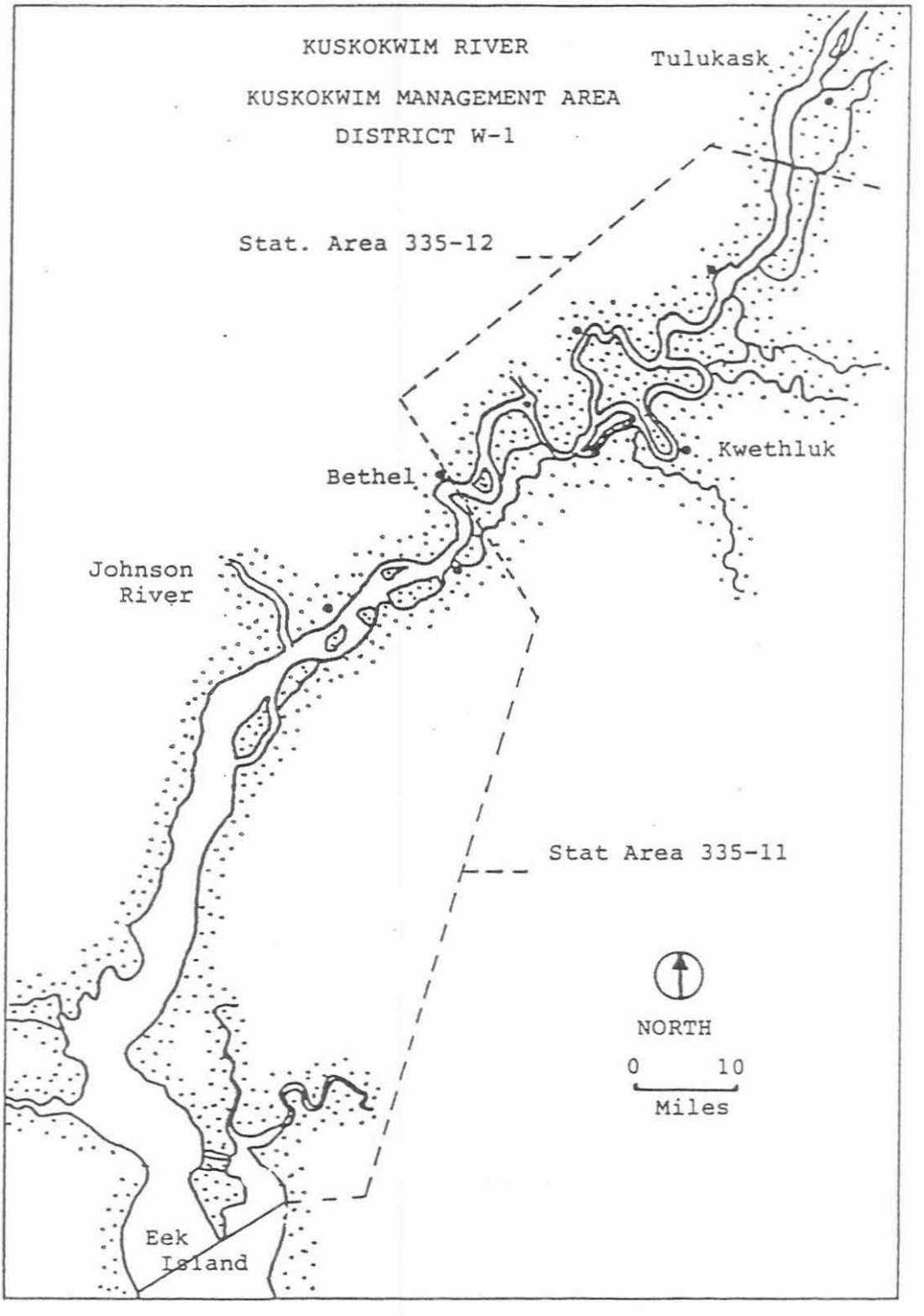

Figure 2 . Kuskokwim Management Area, District W-1

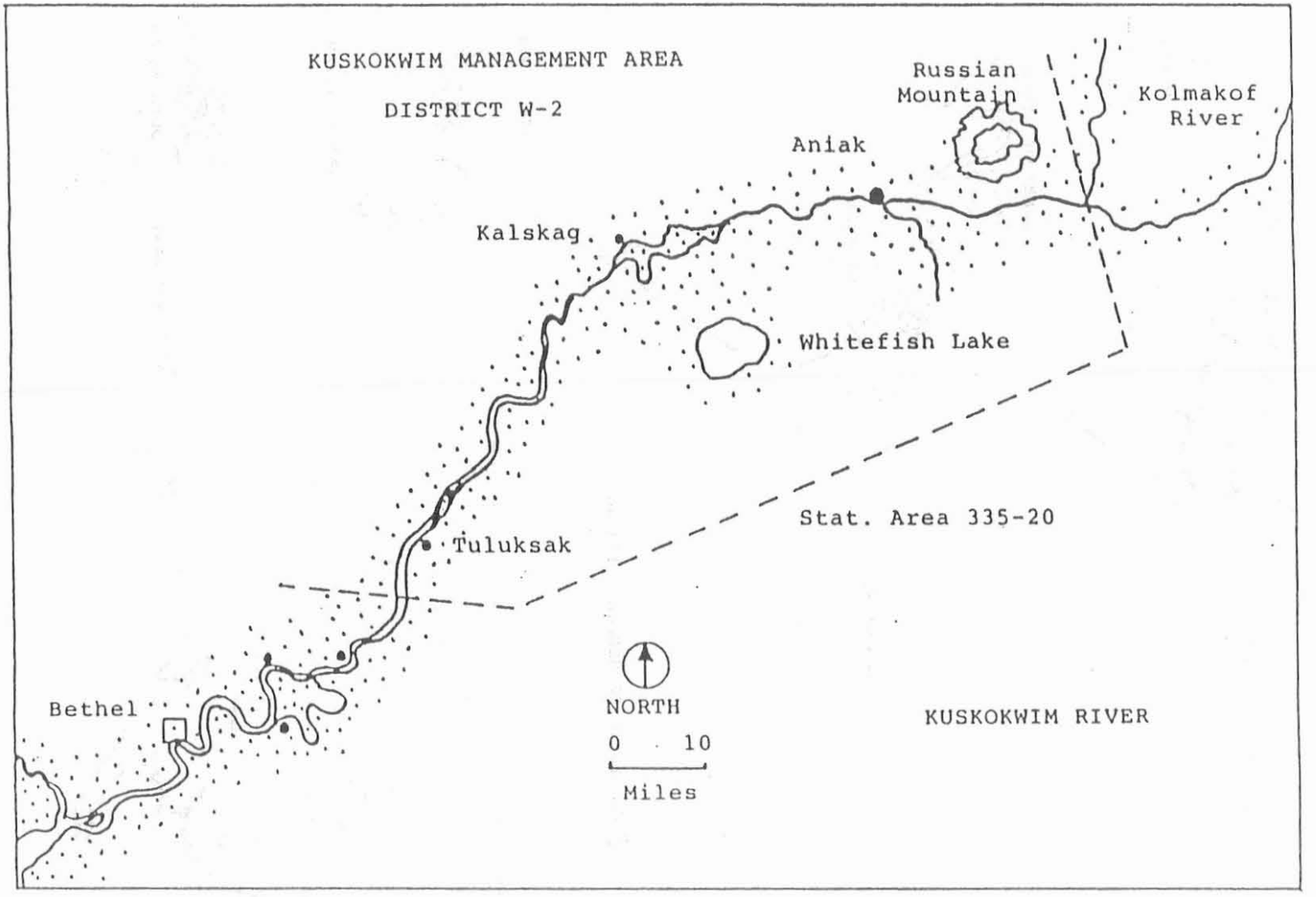

Figure 3. Kuskokwim Management Area, District W-2

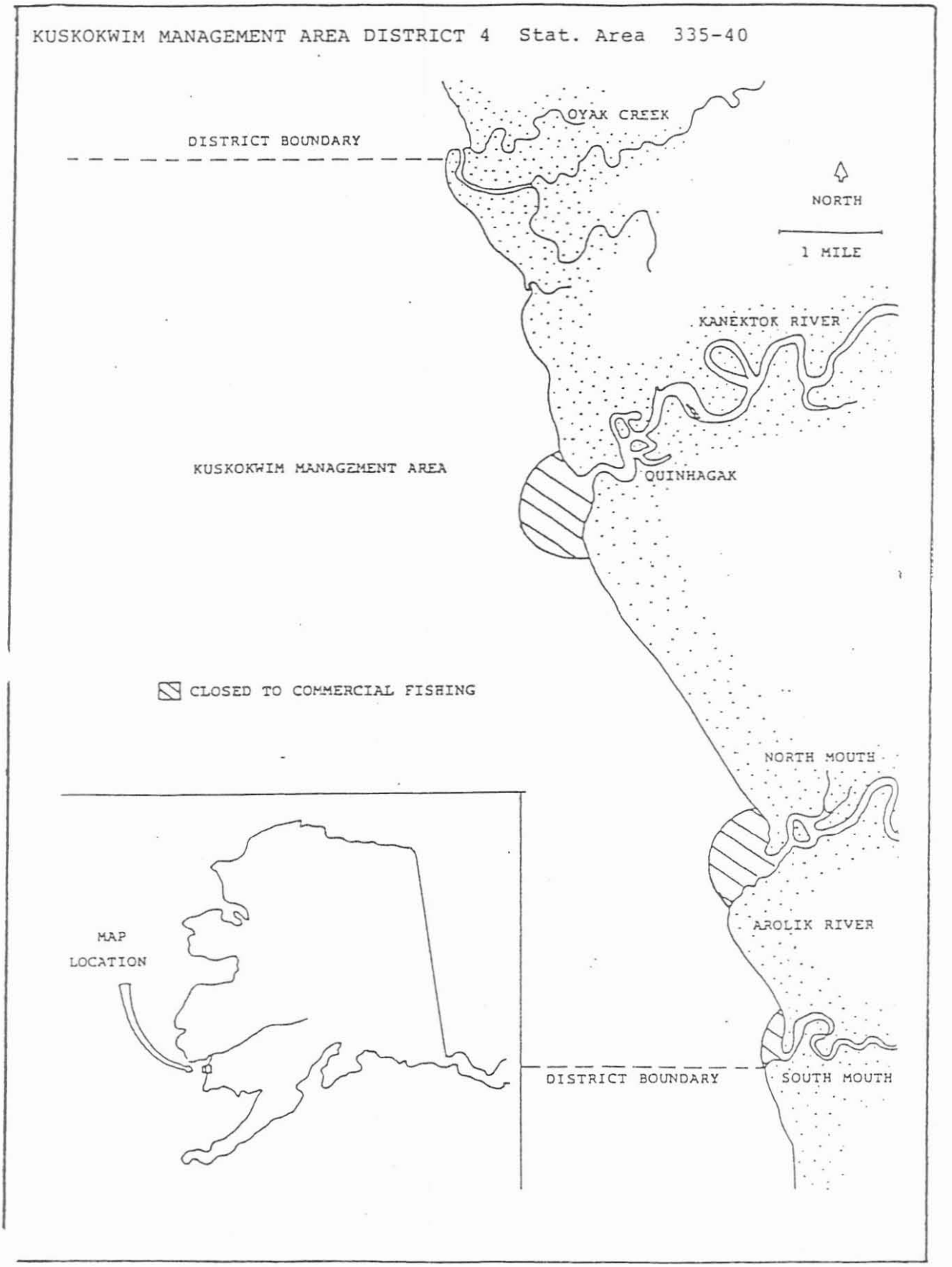

Figure 4. Kuskokwim Management Area, District 4

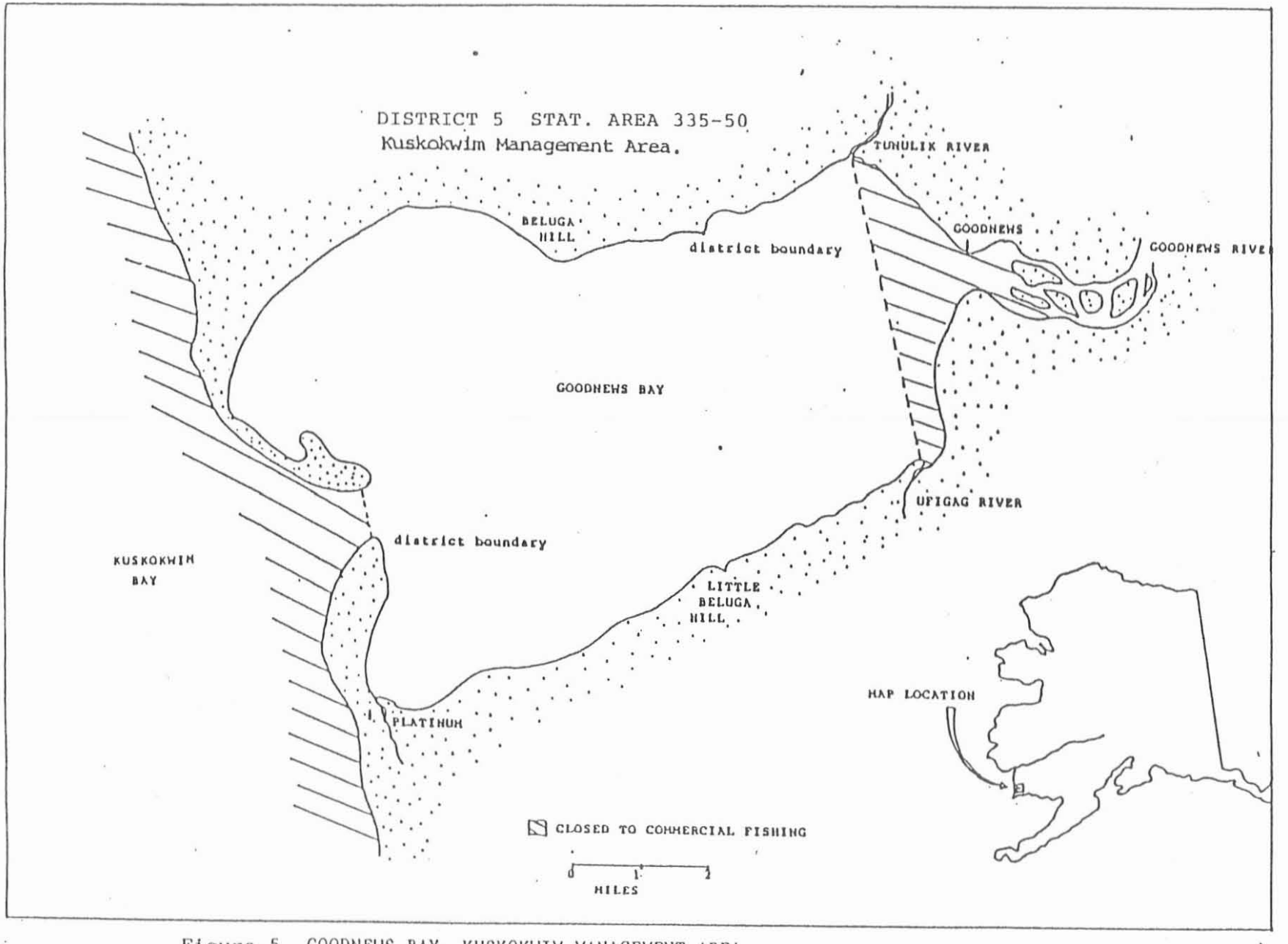

Figure 5. GOODNEWS BAY, KUSKOKWIM MANAGEMENT AREA

Table 1. Utilization of Kuskokwim River chinook salmon, 1960 - 1986.

YEAR	COMMERCIAL HARVEST 1/	ESTIMATED SUBSISTENCE HARVEST 2/	TOTAL UTILIZATION	ESTIMATED 4/ ESCAPEMENT INDEX
1960	5,969	20,361	26,330	
1961	18,918	30,910	49,828	
1962	15,341	14,642	29,983	
1963	12,016	37,246	49,262	
1964	17,149	29,017	46,166	
1965	21,989	27,143	49,132	
1966	25,545	49,606	75,151	
1967	29,986	57,875	87,861	
1968	34,278	30,230	64,508	
1969	43,997	40,138	84,135	
1970	39,290	69,204	108,494	
1971	40,274	42,926	83,200	
1972	39,454	40,145	79,599	
1973	32,838	38,526	71,364	
1974	18,664	26,665	45,329	
1975	21,720	47,784	69,504	
1976	30,735	58,185	88,920	
1977	35,830	55,577	91,407	
1978	45,641	35,881	81,522	
1979	38,966	55,524	94,490	
1980	35,881	59,900	95,781	
1981	47,663	59,669	107,332	
1982	48,234	53,310	101,544	
1983	33,174	52,000	85,174	
1984	31,742	57,000	88,742	47,524
1985	37,889	42,277	80,166	26,400
1986 3/	19,414	44,000	63,414	33,010
FIVE YEAR AVERAGE (1981-1985)	39,740	52,851	92,592	

1/ District 1, 2 and 3.
2/ Estimated subsistence harvest expanded from villages surveyed.
3/ Preliminary harvest figures.
4/ Test fishing escapement index

Table 2. Estimated dollar value of Kuskokwim Area commercial salmon fishery, 1964 - 1986.

YEAR	GROSS VALUE OF CATCH TO FISHERMAN
1964	83,030
1965	90,950
1966	87,466
1967	138,647
1968	290,370
1969	297,233
1970	362,470
1971	371,220
1972	360,727
1973	827,735
1974	1,056,042
1975	899,178
1976	1,380,229
1977	3,891,950
1978	2,337,470
1979	3,678,000
1980	2,725,134
1981	3,766,525
1982	4,213,954
1983	2,670,400
1984	5,809,000
1985	3,253,453
1986 1/	4,746,089
FIVE YEAR AVERAGE (1981-1985)	$3,942,666.40

1/ Preliminary value figures.

Table 3. Kuskokwim Area commercial and subsistence salmon catches, 1913-1986.

	COMMERCIAL CATCH						SUBSISTENCE CATCH		
YEAR	CHINOOK	SOCKEYE	COHO	PINK	CHUM	TOTAL	CHINOOK	OTHER 1/	TOTAL
1913	7,800	-	-	-	-	7,800	-	-	-
1914	-	2,667	-	-	-	2,667	-	-	-
1915	-	-	-	-	-	-	-	-	-
1916	949	-	-	-	-	949	-	-	-
1917	7,878	-	-	-	-	7,878	-	-	-
1918	3,055	-	-	-	-	3,055	-	-	-
1919	4,836	-	-	-	-	4,836	-	-	-
1920	34,853	-	-	-	-	34,853	-	-	-
1921	9,854	-	-	-	-	9,854	-	-	-
1922	8,944	6,120	-	-	-	15,064	-	-	180,000
1923	7,254	-	-	-	-	7,254	-	-	-
1924	19,253	900	7,167	7,167	-	34,487	17,700	203,148	220,848
1925	1,644	5,800			-	7,444	10,800	230,850	241,650
1926	-	-	-	-	-	-	-	-	738,576
1927	-	-	-	-	-	-	-	-	286,254
1928	-	-	-	-	-	-	-	-	481,090
1929	-	-	-	-	-	-	-	-	560,196
1930	7,626	2,448	-	-	-	10,074	-	-	538,650
1931	8,541	-	-	-	-	8,541	-	-	389,367
1932	9,339	-	-	-	-	9,339	-	-	746,415
1933	-	-	-	-	-	-	6,290	443,998	450,288
1934	-	-	-	-	-	-	20,800	597,132	617,932
1935	6,448	-	8,296	-	-	14,744	22,930	554,040	576,970
1936	624	-	-	-	-	624	33,500	549,423	582,923
1937	480	-	-	-	-	480	-	-	537,111
1938	624	-	828	-	-	1,452	10,153	400,242	410,395
1939	134	-	-	-	-	134	14,000	125,425	139,425
1940	247	-	500	-	-	747	8,000	415,523	423,523
1941	187	-	674	-	-	861	8,000	415,523	423,523
1942	-	-	-	-	-	-	6,400	325,339	331,739
1943	-	-	-	-	-	-	6,400	325,339	331,739
:::	-	-	-	-	-	-	-	-	-
1946	2,288	-	674	-	-	2,962	-	-	-
1947	5,356	-	-	-	-	5,356	-	-	-
:::	-	-	-	-	-	-	-	-	-
1951	4,210	-	-	-	-	4,210	-	-	-
:::	-	-	-	-	-	-	-	-	-
1954	57	-	-	-	-	57	-	-	-
:::	-	-	-	-	-	-	-	-	-
1959	3,760	-	-	-	-	3,760	-	-	-
1960	5,969	5,649	5,498	-	3	17,119	20,361	327,297	347,658
1961	23,246	2,308	5,090	91	18,864	49,599	30,910	185,447	216,357
1962	20,867	10,313	12,598	4,340	45,707	93,825	14,642	165,626	180,268
1963	18,571	-	15,660	-	-	34,231	37,246	141,550	178,796
1964	21,230	13,422	28,992	939	707	65,290	30,853	214,942	245,795

- Continued -

Table 3. (continued)

YEAR	COMMERCIAL CATCH						SUBSISTENCE CATCH		
	CHINOOK	SOCKEYE	COHO	PINK	CHUM	TOTAL	CHINOOK	OTHER 1/	TOTAL
1965	24,965	1,886	12,191	-	4,242	43,284	31,143	323,002	354,145
1966	25,823	1,030	22,985	268	2,610	52,716	53,606	201,002	254,608
1967	29,986	652	58,239	-	8,235	97,112	61,224	252,447	313,671
1968	43,157	5,887	154,302	75,818	19,694	298,858	34,986	301,531	336,517
1969	64,777	10,362	110,473	1,251	50,377	237,240	43,732	245,299	289,031
1970	65,032	12,654	62,245	27,422	60,566	227,919	71,376	263,746	335,122
1971	44,936	6,054	10,006	13	99,423	160,432	45,465	130,329	175,794
1972	55,482	4,312	23,880	1,952	97,197	182,823	43,335	131,514	174,849
1973	51,374	5,224	152,408	634	184,207	393,847	41,697	211,468	253,165
1974	30,670	29,003	179,579	60,052	196,127	495,431	29,590	321,358	350,948
1975	27,799	17,535	109,814	899	223,532	379,579	51,045	180,429	231,474
1976	49,262	13,636	112,130	39,998	231,877	446,903	60,603	239,461	300,064
1977	58,256	18,621	263,728	434	298,959	639,998	58,163	218,824	276,987
1978	63,194	13,734	247,271	61,968	282,044	668,211	38,209	137,489	175,698
1979	53,314	39,463	308,683	574	297,167	699,201	57,283	190,582	247,865
1980	48,242	42,213	327,908	30,306	561,483	1,010,152	59,900	105,000	164,900
1981	79,378	105,940	278,587	463	485,635	950,003	63,640	187,732	251,372
1982	79,816	97,716	567,451	18,259	325,471	1,088,713	61,146	194,200	255,346
1983	93,676	90,834	249,018	379	306,554	740,461	55,704	136,242	191,946
1984	74,006	81,307	829,965	23,902	488,482	1,497,662	61,004	167,542	228,546
1985	74,083	121,221	382,096	111	224,680	802,191	52,189	153,457	205,646
1986 2/	44,972	142,029	736,910	15,923	349,268	1,289,102	47,237	159,450	206,687
FIVE YEAR AVERAGE (1981-1985)	80,192	99,404	461,423	8,623	366,164	1,015,806	58,737	167,835	226,571

1/ Primarily chum salmon and coho salmon.
2/ Preliminary figures.

Table 4. Lower Kuskokwim River, District 1, and middle Kuskokwim River, District 2, commercial effort, 1970 - 1986.

	YEAR	UNRESTRICTED MESH	RESTRICTED MESH	COHO SEASON	TOTAL
DISTRICT 1	1970	361	2/	266	387
---------	1971	418	216	83	422
	1972	405	176	245	425
	1973	456	341	411	530
	1974	606	467	516	666
	1975	472	540	533	737
	1976	561	517	516	674
	1977	563	522	572	653
	1978	615	61	597	723
	1979	591	617	613	685
	1980	553	579	586	663
	1981	589	613	586	679
	1982	610	576	596	686
	1983	544	619	577	679
	1984	520	587	619	654
	1985	1/	598	627	654
	1986	1/	631	663	688
	FIVE YEAR AVERAGE (1981-1985)	566	599	601	670
DISTRICT 2	1970	10	2/	11	18
---------	1971	22	2/	2/	22
	1972	12	2/	2/	12
	1973	28	2/	2/	28
	1974	36	2/	16	37
	1975	38	2/	2/	38
	1976	55	2/	11	57
	1977	83	54	24	105
	1978	28	2/	16	43
	1979	41	2/	20	43
	1980	37	21	12	43
	1981	153	11	16	153
	1982	38	50	25	60
	1983	14	42	9	43
	1984	15	49	32	58
	1985	1/	17	16	23
	1986	1/	21	35	43
	FIVE YEAR AVERAGE (1981-1985)	55	34	20	67

1/ No unrestricted mesh season.
2/ No commercial salmon season.

.e 5. Lower Kuskokwim River, District 1, and the middle Kuskokwim River, District 2, combined commercial salmon harvest, 1960 - 1986.

YEAR	CHINOOK	SOCKEYE	COHO	PINK	CHUM	TOTAL
1960	5,969	0	2,498	0	0	8,467
1961	18,918	0	5,044	0	0	23,962
1962	15,341	0	12,432	0	0	27,773
1963	12,016	0	15,660	0	0	27,676
1964	17,149	0	28,613	0	0	45,762
1965	21,989	0	12,191	0	0	34,180
1966	25,545	0	22,985	0	0	48,530
1967	29,986	0	56,313	0	148	86,447
1968	34,278	0	127,306	0	187	161,771
1969	43,997	322	83,765	0	7,165	135,249
1970	39,290	117	38,601	44	1,664	79,716
1971	40,274	2,606	5,253	0	68,914	117,047
1972	39,454	102	22,579	8	78,619	140,762
1973	32,838	369	130,876	33	148,746	312,862
1974	18,664	136	147,269	84	171,887	338,040
1975	21,720	23	81,945	10	181,840	285,538
1976	30,735	2,971	88,501	133	177,864	300,204
1977	35,830	9,379	241,364	203	248,721	535,497
1978	45,641	733	213,393	5,832	248,656	514,255
1979	38,966	1,054	219,060	78	261,874	521,032
1980	35,881	360	222,012	803	483,211	742,267
1981	47,663	48,375	211,251	292	418,677	726,258
1982	48,234	33,154	447,117	1,748	278,306	808,559
1983	33,174	68,855	196,287	211	267,698	566,225
1984	31,742	48,575	623,447	2,942	423,718	1,130,424
1985	37,889	106,647	335,606	75	199,478	679,695
1986 1/	19,414	95,433	659,988	3,422	309,213	1,087,470
FIVE YEAR AVERAGE (1981-1985)	39,740	61,121	362,742	1,054	317,575	782,232

1/ Preliminary harvest figures.

3. Lower Kuskokwim River commercial harvest by species and fishing effort by period, 1986. 1/

PERIOD CATCH AND CATCH PER UNIT EFFORT

PERIOD	PERIOD DATE	HOURS FISHED	NO. OF FISHERMEN	CHINOOK	CPUE 2/	SOCKEYE	CPUE 2/	COHO	CPUE 2/	PINKS	CPUE 2/	CHUMS	CPUE 2/
1	JUNE 26	6	514	7,786	2.52	40,468	13.12	1	0.00	0	0.00	68,947	22.36
2	JUNE 30	6	576	4,200	1.22	22,633	6.55	0	0.00	31	0.01	60,780	17.59
3	JULY 03	6	556	3,224	0.97	15,766	4.73	0	0.00	52	0.02	65,839	19.74
4	JULY 07	6	586	1,805	0.51	8,347	2.37	0	0.00	122	0.03	55,983	15.92
5	JULY 10	6	532	1,156	0.36	5,488	1.72	0	0.00	321	0.10	48,990	15.35
6	JULY 31	6	352	60	0.03	219	0.10	27,553	13.05	705	0.33	2,239	1.06
7	AUGUST 04	6	530	49	0.02	201	0.06	96,127	30.23	584	0.18	1,345	0.42
8	AUGUST 07	9	600	66	0.01	38	0.01	127,024	23.52	454	0.08	50	0.01
9	AUGUST 11	6	553	32	0.01	3	0.00	82,215	24.78	210	0.06	9	0.00
10	AUGUST 13	6	526	32	0.01	2	0.00	92,918	29.44	123	0.04	3	0.00
11	AUGUST 15	6	519	67	0.02	4	0.00	55,633	17.87	60	0.02	11	0.00
12	AUGUST 18	6	477	15	0.01	4	0.00	51,328	17.93	45	0.02	0	0.00
13	AUGUST 21	6	465	8	0.00	2	0.00	50,640	18.15	32	0.01	2	0.00
14	AUGUST 25	6	458	4	0.00	0	0.00	37,365	13.60	9	0.00	0	0.00
15	AUGUST 28	6	346	0	0.00	0	0.00	16,436	7.92	3	0.00	3	0.00
16	SEPT. 01	6	234	6	0.00	0	0.00	5,949	4.24	4	0.00	0	0.00
		99	688	18,510		93,175		643,189		2,755		304,201	

CUMULATIVE CATCH AND CUMULATIVE CATCH PER UNIT EFFORT

PERIOD	PERIOD DATE	HOURS FISHED	NO. OF FISHERMEN	CHINOOK	CPUE 2/	SOCKEYE	CPUE 2/	COHO	CPUE 2/	PINKS	CPUE 2/	CHUMS	CPUE 2/
1	JUNE 26	6	514	7,786	2.52	40,468	13.12	1	0.00	0	0.00	68,947	22.36
2	JUNE 30	6	576	11,986	1.83	63,101	9.65	1	0.00	31	0.00	129,727	19.84
3	JULY 03	6	556	15,210	1.54	78,867	7.99	1	0.00	83	0.01	195,566	19.80
4	JULY 07	6	586	17,015	1.27	87,214	6.51	1	0.00	205	0.02	251,549	18.78
5	JULY 10	6	532	18,171	1.10	92,702	5.59	1	0.00	526	0.03	300,539	18.12
6	JULY 31	6	352	18,231	0.98	92,921	4.97	27,554	1.47	1,231	0.07	302,778	16.19
7	AUGUST 04	6	530	18,280	0.84	93,122	4.26	123,681	5.65	1,815	0.08	304,123	13.90
8	AUGUST 07	9	600	18,346	0.67	93,160	3.42	250,705	9.19	2,269	0.08	304,173	11.15
9	AUGUST 11	6	553	18,378	0.60	93,163	3.05	332,920	10.88	2,479	0.08	304,182	9.94
10	AUGUST 13	6	526	18,410	0.55	93,165	2.76	425,838	12.62	2,602	0.08	304,185	9.01
11	AUGUST 15	6	519	18,477	0.50	93,169	2.53	481,471	13.06	2,662	0.07	304,196	8.25
12	AUGUST 18	6	477	18,492	0.47	93,173	2.35	532,799	13.41	2,707	0.07	304,196	7.66
13	AUGUST 21	6	465	18,500	0.44	93,175	2.19	583,439	13.72	2,739	0.06	304,198	7.15
14	AUGUST 25	6	458	18,504	0.41	93,175	2.06	620,804	13.72	2,748	0.06	304,198	6.72
15	AUGUST 28	6	346	18,504	0.39	93,175	1.97	637,240	13.46	2,751	0.06	304,201	6.43
16	SEPT. 01	6	234	18,510	0.38	93,175	1.91	643,189	13.20	2,755	0.06	304,201	6.24

1/ Preliminary harvest figures.
2/ CPUE = Catch Per Unit Effort = HARVEST/(HOURS FISHED X NUMBER OF FISHERMAN).

Middle Kuskokwim River commercial harvest by species and fishing effort by period, 1986. 1/

PERIOD CATCH AND CATCH PER UNIT EFFORT

PERIOD	PERIOD DATE	HOURS FISHED	NO. OF FISHERMEN	CHINOOK	CPUE 2/	SOCKEYE	CPUE 2/	COHO	CPUE 2/	PINKS	CPUE 2/	CHUMS	CPUE 2/
1	JUNE 26	6	3	186	10.33	616	34.22	0	0.00	0	0.00	439	24.39
2	JUNE 30	6	13	386	4.95	1,171	15.01	0	0.00	0	0.00	1,619	20.76
3	JULY 03	6	8	168	3.50	265	5.52	0	0.00	1	0.02	1,249	26.02
4	JULY 07	6	2	117	9.75	26	2.17	0	0.00	0	0.00	387	32.25
5	JULY 10	6	6	45	1.25	179	4.97	0	0.00	2	0.06	1,282	35.61
6	AUGUST 07	6	8	0	0.00	0	0.00	2,445	50.94	6	0.13	0	0.00
7	AUGUST 11	6	10	0	0.00	0	0.00	2,677	44.62	1	0.02	23	0.38
8	AUGUST 13	6	10	0	0.00	1	0.02	2,787	46.45	1	0.02	13	0.22
9	AUGUST 15	6	27	1	0.01	0	0.00	5,761	35.56	9	0.06	0	0.00
10	AUGUST 18	6	8	1	0.02	0	0.00	1,804	37.58	1	0.02	0	0.00
11	AUGUST 21	6	6	0	0.00	0	0.00	1,325	36.81	0	0.00	0	0.00
		66	43	904		2,258		16,799		667		5,012	

CUMULATIVE CATCH AND CUMULATIVE CATCH PER UNIT EFFORT

PERIOD	PERIOD DATE	HOURS FISHED	NO. OF FISHERMEN	CHINOOK	CPUE 2/	SOCKEYE	CPUE 2/	COHO	CPUE 2/	PINKS	CPUE 2/	CHUMS	CPUE 2/
	JUNE 26	6	3	186	10.33	616	34.22	0	0.00	0	0.00	439	24.39
2	JUNE 30	6	13	572	5.96	1,787	18.61	0	0.00	0	0.00	2,058	21.44
3	JULY 03	6	8	740	5.14	2,052	14.25	0	0.00	1	0.01	3,307	22.97
4	JULY 07	6	2	857	5.49	2,078	13.32	0	0.00	1	0.01	3,694	23.68
5	JULY 10	6	6	902	4.70	2,257	11.76	0	0.00	3	0.02	4,976	25.92
6	AUGUST 07	6	8	902	3.76	2,257	9.40	2,445	10.19	9	0.04	4,976	20.73
7	AUGUST 11	6	10	902	3.01	2,257	7.52	5,122	17.07	10	0.03	4,999	16.66
8	AUGUST 13	6	10	902	2.51	2,258	6.27	7,909	21.97	11	0.03	5,012	13.92
9	AUGUST 15	6	27	903	1.73	2,258	4.33	13,670	26.19	20	0.04	5,012	9.60
10	AUGUST 18	6	8	904	1.59	2,258	3.96	15,474	27.15	21	0.04	5,012	8.79
11	AUGUST 21	6	6	904	1.49	2,258	3.73	16,799	27.72	21	0.03	5,012	8.27

1/ Preliminary harvest figures.

2/ CPUE = Catch Per Unit Effort = HARVEST/(HOURS FISHED X NUMBER OF FISHERMAN).

8. Quinhagak commercial harvest by species and fishing effort by period, 1986. 1/

PERIOD	PERIOD DATE	HOURS FISHED	NO. OF FISHERMEN	PERIOD CATCH AND CATCH PER UNIT EFFORT									
				CHINOOK	CPUE 2/	SOCKEYE	CPUE 2/	COHO	CPUE 2/	PINKS	CPUE 2/	CHUMS	CPUE 2/
1	JUNE 12	12	0	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
2	JUNE 16	12	0	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
3	JUNE 19	12	214	5,801	2.26	171	0.07	0	0.00	1	0.00	1,198	0.47
4	JUNE 23	12	216	6,276	2.42	1,371	0.53	0	0.00	0	0.00	3,226	1.24
5	JUNE 26	12	130	1,703	1.09	2,300	1.47	0	0.00	0	0.00	4,329	2.78
6	JUNE 30	12	109	4,496	3.44	2,601	1.99	2	0.00	0	0.00	3,860	2.95
7	JULY 03	12	141	2,018	1.19	3,604	2.13	0	0.00	55	0.03	3,743	2.21
8	JULY 07	12	96	960	0.83	2,803	2.43	0	0.00	257	0.22	3,708	3.22
9	JULY 10	12	93	736	0.66	2,786	2.50	5	0.00	516	0.46	4,022	3.60
10	JULY 14	12	127	406	0.27	3,134	2.06	2	0.00	1,160	0.76	1,966	1.29
11	JULY 17	12	61	222	0.30	1,502	2.05	14	0.02	1,428	1.95	2,326	3.18
12	JULY 21	12	77	131	0.14	989	1.07	125	0.14	3,890	4.21	1,143	1.24
13	JULY 31	12	5	0	0.00	1	0.02	146	2.43	19	0.32	5	0.08
14	AUGUST 04	12	2	0	0.00	3	0.13	190	7.92	21	0.88	4	0.17
15	AUGUST 06	12	64	25	0.03	34	0.04	4,349	5.66	386	0.50	52	0.07
16	AUGUST 08	12	78	11	0.01	42	0.04	6,984	7.46	489	0.52	46	0.05
17	AUGUST 11	12	75	6	0.01	28	0.03	6,800	7.56	205	0.23	27	0.03
18	AUGUST 13	12	64	6	0.01	19	0.02	5,284	6.88	113	0.15	8	0.01
19	AUGUST 15	12	73	8	0.01	32	0.04	4,991	5.70	42	0.05	6	0.01
20	AUGUST 18	12	74	10	0.01	10	0.01	6,197	6.98	20	0.02	9	0.01
21	AUGUST 20	12	87	6	0.01	27	0.03	5,861	5.61	52	0.05	14	0.01
22	AUGUST 22	12	93	3	0.00	4	0.00	4,662	4.18	9	0.01	2	0.00
23	AUGUST 25	12	70	1	0.00	2	0.00	3,414	4.06	2	0.00	0	0.00
24	AUGUST 27	12	62	4	0.01	7	0.01	3,637	4.89	9	0.01	2	0.00
25	AUGUST 29	12	63	3	0.00	5	0.01	2,720	3.60	14	0.02	3	0.00
26	SEPT. 01	12	44	1	0.00	8	0.02	1,561	2.96	9	0.02	1	0.00
27	SEPT. 03	12	27	2	0.01	1	0.00	600	1.85	3	0.01	0	0.00
28	SEPT. 05	12	0	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
29	SEPT. 08	12	0	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
Season Total		348	324	22,835		21,484		57,544		8,700		29,700	

1/ Preliminary harvest figures.
2/ CPUE = Catch Per Unit Effort = HARVEST/(HOURS FISHED X NUMBER OF FISHERMAN).

Table 9. Quinhagak, District 4, commercial salmon harvest, 1960 - 1986.

YEAR	CHINOOK	SOCKEYE	COHO	PINK	CHUM	TOTAL
1960	0	5,649	3,000	0	0	8,649
1961	4,328	2,308	46	90	18,864	25,636
1962	5,526	10,313	0	4,340	45,707	65,886
1963	6,555	0	0	0	0	6,555
1964	4,081	13,422	379	939	707	19,528
1965	2,976	1,886	0	0	4,242	9,104
1966	278	1,030	0	268	2,610	4,186
1967	0	652	1,926	0	8,087	10,665
1968	8,879	5,884	21,511	75,818	19,497	131,589
1969	16,802	3,784	15,077	953	38,206	74,822
1970	18,269	5,393	16,850	15,195	46,556	102,263
1971	4,185	3,118	2,982	13	30,208	40,506
1972	15,880	3,286	376	1,878	17,247	38,667
1973	14,993	2,783	16,515	277	19,680	54,248
1974	8,704	19,510	10,979	43,642	15,298	98,133
1975	3,928	8,584	10,742	486	35,233	58,973
1976	14,110	6,090	13,777	31,412	43,659	109,048
1977	19,090	5,519	9,028	202	43,707	77,546
1978	12,335	7,589	20,114	47,033	24,798	111,869
1979	11,144	18,828	47,525	295	25,995	103,787
1980	10,387	13,221	62,610	21,671	65,984	173,873
1981	24,525	17,292	47,587	160	53,316	142,880
1982	22,106	25,685	73,651	11,838	33,336	166,616
1983	46,385	10,263	32,442	168	23,090	112,348
1984	33,652	17,258	135,342	16,249	50,424	252,925
1985	30,401	7,876	29,992	28	20,418	88,715
1986 1/	22,835	21,484	57,544	8,700	29,700	140,263
FIVE YEAR AVERAGE (1981-1985)	31,414	15,675	63,803	5,689	36,117	152,697

1/ Preliminary harvest figures.

Table 10. Quinhagak, District 4, commercial effort, 1970 - 1986.

YEAR	EFFORT 1/
1970	88
1971	61
1972	107
1973	109
1974	196
1975	127
1976	181
1977	258
1978	200
1979	206
1980	169
1981	186
1982	117
1983	226
1984	263
1985	300
1986	324
1981-1985 FIVE YEAR AVERAGE	218

1/ Permits that made at least one delivery during that year.

Table 11. Goodnews Bay commercial harvest by species and fishing effort by period, 1986. 1/

PERIOD	PERIOD DATE	HOURS FISHED	NO. OF FISHERMEN	PERIOD CATCH AND CATCH PER UNIT EFFORT									
				CHINOOK	CPUE 2/	SOCKEYE	CPUE 2/	COHO	CPUE 2/	PINKS	CPUE 2/	CHUMS	CPUE 2/
1	JUNE 19	12	24	296	1.03	478	1.66	0	0.00	0	0.00	249	0.86
2	JUNE 23	12	32	788	2.05	1,029	2.68	0	0.00	0	0.00	886	2.31
3	JUNE 26	12	36	352	0.81	1,719	3.98	0	0.00	1	0.00	866	2.00
4	JULY 07	12	32	736	1.92	4,282	11.15	0	0.00	131	0.34	2,145	5.59
5	JULY 10	12	34	156	0.38	4,494	11.01	0	0.00	174	0.43	1,346	3.30
6	JULY 14	12	40	54	0.11	3,036	6.33	0	0.00	251	0.52	996	2.08
7	JULY 16	12	47	77	0.14	2,841	5.04	2	0.00	428	0.76	1,360	2.41
8	JULY 18	12	52	54	0.09	1,798	2.88	5	0.01	558	0.89	1,191	1.91
9	JULY 21	12	44	35	0.07	1,318	2.50	2	0.00	492	0.93	467	0.88
10	JULY 23	12	45	24	0.04	874	1.62	29	0.05	517	0.96	301	0.56
11	JULY 25	12	35	21	0.05	532	1.27	80	0.19	408	0.97	236	0.56
12	JULY 28	12	24	21	0.07	555	1.93	68	0.24	385	1.34	89	0.31
13	JULY 30	12	21	16	0.06	343	1.36	209	0.83	321	1.27	90	0.36
14	AUGUST 01	12	19	12	0.05	271	1.19	255	1.12	185	0.81	22	0.10
15	AUGUST 04	12	26	6	0.02	190	0.61	553	1.77	145	0.46	23	0.07
16	AUGUST 06	12	28	12	0.04	175	0.52	934	2.78	128	0.38	22	0.07
17	AUGUST 08	12	27	9	0.03	260	0.80	1,133	3.50	108	0.33	16	0.05
18	AUGUST 11	12	28	9	0.03	174	0.52	1,193	3.55	66	0.20	10	0.03
19	AUGUST 13	12	24	4	0.01	131	0.45	1,624	5.64	28	0.10	5	0.02
20	AUGUST 15	12	26	7	0.02	109	0.35	1,784	5.72	31	0.10	7	0.02
21	AUGUST 18	12	29	8	0.02	120	0.34	2,595	7.46	20	0.06	3	0.01
22	AUGUST 20	12	39	6	0.01	138	0.29	2,462	5.26	23	0.05	7	0.01
23	AUGUST 22	12	39	3	0.01	104	0.22	1,904	4.07	16	0.03	4	0.01
24	AUGUST 25	12	31	4	0.01	36	0.10	1,739	4.67	6	0.02	2	0.01
25	AUGUST 27	12	26	2	0.01	28	0.09	1,101	3.53	4	0.01	0	0.00
26	AUGUST 29	12	30	4	0.01	17	0.05	725	2.01	6	0.02	6	0.02
27	SEPT. 01	12	21	7	0.03	39	0.15	604	2.40	10	0.04	2	0.01
28	SEPT. 03	12	22	0	0.00	21	0.08	377	1.43	5	0.02	4	0.02
29	SEPT. 05	12	0	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
30	SEPT. 08	12	0	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
Season Total		360	86	2,723		25,112		19,378		4,447		10,355	

1/ Preliminary harvest figures.
2/ CPUE = Catch Per Unit Effort = HARVEST/(HOURS FISHED X NUMBER OF FISHERMAN).

Table 12.Goodnews Bay, District 5, commercial salmon harvest, 1968 - 1986.

YEAR	CHINOOK	SOCKEYE	COHO	PINK	CHUM	TOTAL
1968	-	-	5,458	-	-	5,458
1969	3,978	6,256	11,631	298	5,006	27,169
1970	7,163	7,144	6,794	12,183	12,346	45,630
1971	477	330	1,771	0	301	2,879
1972	264	924	925	66	1,331	3,510
1973	3,543	2,072	5,017	324	15,781	26,737
1974	3,302	9,357	21,340	16,373	8,942	59,314
1975	2,156	9,098	17,889	419	5,904	35,466
1976	4,417	5,575	9,852	8,453	10,354	38,651
1977	3,336	3,723	13,335	29	6,531	26,954
1978	5,218	5,412	13,764	9,103	8,590	42,087
1979	3,204	19,581	42,098	201	9,298	74,382
1980	2,331	28,632	43,256	7,832	11,748	93,799
1981	7,190	40,273	19,749	11	13,642	80,865
1982	9,476	38,877	46,683	4,673	13,829	113,538
1983	14,117	11,716	19,660	0	6,766	52,259
1984	8,612	15,474	71,176	4,711	14,340	114,313
1985	5,793	6,698	16,498	8	4,784	33,781
1986 1/	2,723	25,112	19,378	4,447	10,355	62
FIVE YEAR AVERAGE (1981-1985)	9,038	22,608	34,753	1,881	10,672	78,951

1/ Preliminary harvest figures.

Table 13. Goodnews Bay, District 5, commercial effort, 1968 - 1986.

YEAR	EFFORT 1/
1968	18
1969	42
1970	35
1971	16
1972	14
1973	21
1974	49
1975	50
1976	40
1977	34
1978	35
1979	30
1980	48
1981	48
1982	48
1983	79
1984	77
1985	69
1986	86
1981-1985 FIVE YEAR AVERAGE	64

1/ Permits that made at least one delivery during that year.